CLAIMS

What is claimed is:

1. A programmable fixed priority and round-robin arbiter comprising:

a rotating unit which, when operating in a fixed priority mode or in a round-robin mode, rotates priority information related to bus masters stored in a register in a direction or rotation to give the highest priority to a bus master in response to pointer information, and outputs changed priority information;

a request-reordering unit which, when a request signal is received from the bus masters, reorders requested priorities of the bus masters to be in accordance with the changed priority information and outputs a request-reordering signal;

a request-selecting unit which outputs a bus master-selecting signal according to priorities in response to the request-reordering signal; and

a grant-reordering unit which outputs a bus master grant signal to the bus masters according to priorities in response to the bus master-selecting signal.

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2. The programmable fixed priority and round-robin arbiter of claim 1, wherein, when operating in the round-robin mode, the priority information is programmed such that weight is given to at least one of the bus masters.

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3. The programmable fixed priority and round-robin arbiter of claim 1, wherein the pointer information does not change in the fixed priority mode and periodically changes in the round-robin mode.

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4. The programmable fixed priority and round-robin arbiter of claim 3, wherein a period of the periodic change is a time period corresponding to when the bus master grant signal of the highest priority is output.

5. A bus control method in which an arbiter operating in a fixed priority mode or in a round-robin mode controls a plurality of bus masters, the bus control method comprising:

the arbiter rotating priority information related to bus masters stored in a register to give the highest priority to a bus master in response to pointer information in the fixed priority mode or the round-robin mode, and outputting changed priority information;

at least one of the bus masters transmitting a request signal for occupation of a bus to the arbiter;

the arbiter reordering requested priorities of the bus masters corresponding to the changed priority information and outputting a request-reordering signal;

the arbiter outputting a bus master-selecting signal according to priorities in response to the request-reordering signal; and

the arbiter outputting a bus master grant signal to the bus masters in response to the bus master-selecting signal according to priorities.

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6. The bus control method of claim 5, wherein, when operating in the round-robin mode, the priority information is programmed such that weight is given to at least one of the bus masters.

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- 7. The bus control method of claim 5, wherein the pointer information does not change in the fixed priority mode and periodically changes in the round-robin mode.
- 8. The bus control method of claim 7, wherein a period of the periodic change is the time period corresponding to when the bus master grant signal of the highest priority is output.